THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

TOWNSHIP OF MAIDSTONE

COUNTY OF ESSEX

1964

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ONTARIO WATER
RESOURCES COMMISSION

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REPORT

ONTARIO WATER RESOURCES COMMISSION

Municipality: TOWNSHIP OF MAIDSTONE Date of Inspection: July 7 & 8/64.
County of Essex
Re: Water Pollution Survey

Field Insp. by: J.K.Ferris, Eng. Asst., Report by: J.K.Ferris,B.S.A.
G.A.Missingham, Engineer.

A water pollution survey of a section of the Township of Maidstone was made on July 7 and 8, 1964.

The area investigated was, in general, bounded by Highway No. 39 on the south, Lake St. Clair on the north, the Fourth Concession on the west and the Second Concession on the east. This area includes the hamlet of Emeryville.

The survey included the locating, and collecting of water samples, from municipal surface-water drains, and also the investigation of waste and sewage discharges from private and commercial properties.

GENERAL

The total population of the area in question is estimated at approximately 1,000 persons. The Hamlet of Emeryville has a population of 700 to 800 persons, and the remaining population is housed on random properties located on both sides of Highway No. 39 and on roads and streets extending north approximately 0.25 mile to the shore of Lake St. Clair.

Septic tank systems are utilized almost entirely to provide treatment for sanitary sewage and domestic wastes. Heavy clay soil conditions, combined with a high water table, tend to result in unsatisfactory operation of field-tile disposal beds in many instances. These conditions have induced the illegal practice of discharging inadequately treated septic tank effluents into surface-water drains. The lack of space for the installation of adequate field-tile disposal beds is evident on many residential and commercial properties. This condition also results in the discharge of inadequately treated wastes into surface-water drains.

General drainage direction in this section of the township is northerly towards Lake St. Clair. Local drainage in the area in question, however, flows either easterly or westerly into municipal drains which in turn flow north and discharge into Lake St. Clair. The sanitary conditions in three of these municipal surface-water drains, known as the Second, Third and Fourth Concession drains, were investigated during the survey.

The sanitary chemical and bacteriological analyses of samples collected are listed in the attached tables 1 and 2.

INTERPRETATION OF ANALYSES

For convenience in the interpretation of laboratory analyses, The Ontario Water Resources Commission water quality objectives for surface-water drains are listed:

5-Day BOD (Biochemical Oxygen Demand)
- not greater than 15 parts per million

Suspended Solids
- not greater than 15 parts per million

Coliform Organisms - (Membrane Filter Method)
- not greater than 2,400 per 100 millilitres

Anionic Detergents

- An anionic detergent content in water is an additional indication of the presence of domestic sewage.

SIGNIFICANCE OF LABORATORY ANALYSES

1. Fourth Concession Drain

It is noted that the sanitary chemical and bacteriological analyses of all samples collected from the Fourth Concession drain show figures greatly in excess of the water quality objectives for surface-water drains. It is therefore indicated that the drain is grossly polluted. The excessively high coliform counts and the concentration of anionic detergents indicate that domestic sewage is probably the major cause of the pollution. Several drains leading from private properties were located along the banks of the Fourth Concession drain. Visual inspection revealed that periodically inadequately treated wastes were being discharged from at least six of these private drains.

An OWRC report concerning the pollution of the Fourth Concession drain was submitted to the Township of Maidstone in 1963. It was recommended in that report that private drains discharging inadequately treated waste to the municipal surface-water drain be located and discontinued.

2. Third Concession Drain

The laboratory analyses of samples collected from the Third Concession drain also indicate a condition of gross pollution. Several drains leading from private properties and discharging into the Third Concession drain were located. Visible waste and characteristic conditions around these outfalls showed that inadequately treated waste was being discharged. The analysis of a sample of waste collected from a drain leading from the Swingland Hotel property and discharging into the Fourth Concession drain indicated that inadequately treated waste was being discharged.

3. Second Concession Drain

The analyses of samples collected from this drain also indicated a condition of gross pollution. The excessively high bacteriological count and the high detergent content, indicate that the pollution is coming from domestic sources. It is suggested that inadequately treated waste from the Alexander Hotel property is being discharged into this drain along with inadequately treated wastes from adjacent residential properties.

SUMMARY

A water pollution survey of part of the Township of Maidstone was made on July 7 and 8, 1964. Municipal surface-water drains investigated included the Second, Third, and Fourth Concession drains, and also local drains in the Emeryville area.

The sanitary chemical and bacteriological analyses of samples collected, in conjunction with conditions of pollution as noted visibly, confirm the presence of gross pollution in the above mentioned surface-water drains.

The excessively high coliform and detergent counts indicate that inadequately treated waste from domestic sources is most probably the major source of the pollution. The outfalls of several drains leading from domestic properties were located. Visible conditions around these outfalls indicated that inadequately treated waste was being discharged periodically from there into the municipal surface-water drains.

RECOMMENDATIONS

Based on field investigations and the findings as described in this report it is recommended that:

1. The Township of Maidstone locate and eliminate the sources of polluting material which is currently being discharged to the Second, Third and Fourth Concession drains.

2. The Township of Maidstone investigate the possibilities of installing sanitary sewers and a method of sewage treatment to service the Emeryville area of the township.

3. In the event that the institution of such a project is not feasible, it will then be necessary that all drains discharging inadequately treated wastes into surface-water drains and storm sewers be located and discontinued. This action will therefore require each property owner to provide adequate treatment for his own wastes.

All of which is respectfully submitted,

District Engineer: G A Missingham
for C. E. McIntyre

Approved by:
K. H. Sharpe, Director.

T A B L E I

TOWNSHIP OF MAIDSTONE - WATER POLLUTION SURVEY

Location of Sampling Point	5-Day BOD (ppm)	SOLIDS (ppm)			Anionic Detergents as A B S	Coliforms per 100 ml MEMBRANE FILTER
		Total	Susp.	Diss.		
Fourth Concession Drain						
upstream from Emeryville -	18.0	450	104	346	0.2	56,000
foot of Carahul Drive -	16.0	582	42	540	5.6	51,000
foot of Pierre Drive -	16.0	494	12	480	4.6	1,370,000
north of Highway No. 39 near outfall to Lake St.Clair -	100.0	2468	2154	314	2.3	10,700,000
Third Concession Drain						
south of Highway No. 39 -	8.4	426	13	413	2.0	490,000
opposite Swingland Hotel -	180.0	3078	2300	778	9.4	28,000,000
near outfall to Lake St.Clair -	84.0	568	118	450	3.4	900,000
Second Concession Drain						
near outfall to Lake St.Clair -	80.0	1718	450	1268	16.0	19,000,000

TABLE 2

TOWNSHIP OF MAIDSTONE - WATER POLLUTION SURVEY

Location of Sampling Point	5-Day BOD (ppm)	SOLIDS (ppm)			Anionic Detergents as A B S	Coliforms per 100 ml MEMBRANE FILTER
		Total	Susp.	Diss.		
Private Drain						
from Swingland Hotel -	320	1674	1304	370	7.6	10,000,000
Drain from Property of G. Lavin						
Hwy. No. 39 & St.Mary's St.-	160	3024	2548	476	13.0	110,000,000
Collection Box						
east side of Emery Dr. south of Hwy. No. 39 beside Chawrin Market	8.8	378	190	188	1.8	5,100,000

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